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ABSTRACT

This paper presents the results of research conducted to investigate the relationship of various psychosocial variables on the positioning of college ice hockey players. The California Personality Inventory (CPI) was administered to the NCAA Championship ice hockey team at the University of Minnesota, and a separate subjective psychosocial rating was gathered from the coaching staff at the University of Minnesota concerning other related psychosocial characteristics and categorized by position. It was hypothesized that college ice hockey players with certain psychosocial characteristics would be assigned certain designated positions (ADP) and that the ADP concept may be related to other situational variables. The data indicated that there were significant differences in the relationships between ADP and the psychosocial variables of the number of goals scored, sense of well being, and achievement via conformance and height. This psychosocial information is perceived by the author as being valuable to the coach who must make the decision as to the ADP and assume the responsibility for helping each individual perform to his fullest capacity. (Author/MB)

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"The Relationship of Various Psychosocial Variables on the Positioning of College Ice Hockey Players"

by

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The psychosocial characteristics of the athlete has long been of interest to those researchers delving into the scientific realm of sport (Booth, 1958; Carter, 1940; Cooper, 1969; Flanagan, 1951; Schendel, 1965).

In the past two decades research concerning personality of those involved with a myriad of sporting activity has significantly increased. These investigations have typically compared the personality assessment of the following groups: the athlete, novice athlete, non-athlete, varsity athlete, the intramural participant and the Olympic caliber athlete, as well as other variables such as age, sex, culture and specific sporting activity (Berger, 1969; Darden, 1972; Fletcher, 1971; Johnson, 1972; Peterson, 1967; Williams, 1970).

Despite the apparent proliferation of personality research dealing with the athlete, their seems to be a void in the literature concerning the athletes' designated position (ADP) and other situational team related variables as identified by existing personality characteristics (Balaze, 1975; Bentson, 1955).

With the above in focus, the purpose of the investigation was to determine the relationship between various psychosocial variables and the positioning of college ice hockey players. It was hypothesized that college ice hockey players with certain psychosocial characteristics would be assigned particular positions (ADP) and that this ADP concept may be related to other situational team variables.

Method

Subjects. The subjects were twenty-six members of the University of Minnesota's defending National Collegiate Athletic Association Championship Men's Varsity Ice Hockey team. The subjects volunteered to participate in the investigation in accordance with the University of Minnesota

protocol for research concerning human subjects.[1]

The subjects were then classified according to their ADP which resulted in four classifications.

Table 1
Athlete's Designated Position (ADP)

ADP	N
Wings	12
Centers	4
Defense	7
Goalies	3
Total N =	26

Table 2
CPI Personality Variables

Dominance	Do	Tolerance	To
Capacity for Status	Cs	Good Impression	Gi
Sociability	Sy	Communality	Cm
Social Presence	Sp	Achievement via Conformance	Ac
Self-acceptance	Sa	Achievement via Independence	Ai
Sense of Well-being	Wb	Intellectual Efficiency	Ie
Responsibility	Re	Psychological-mindedness	Py
Socialization	So	Flexibility	Fx
Self-control	Sc	Femininity	Fe

In addition to the personality assessment as shown in Table 2 measured by California Psychological Inventory (CPI), the following related variables were gathered by personal interview with the head coach of the University of Minnesota Ice Hockey squad. These variables are depicted in table three.

[1]This research was supported in part by a grant from Research and Development Funds, College of Education, University of Minnesota.

Table 3
ADP Related Variables

Age	Plus-Minus+
Weight	Financial Aid*
Height	Team Leader*
Penalty Minutes	Hard Worker*
Number of Goals	Aggressive*
Number of Assists	Amount of Ice Time+

+A plus was assigned to the University of Minnesota athletes if they were on the ice when their team scored. (N=seasons total)
-A minus was assigned to the University of Minnesota athletes if they were on the ice when the opponent scored. (N=seasons total)
*Determined by head coach's subjective evaluation and assigned a value of high(1); medium(2); and low(3).

Procedures. The twenty-six volunteer subjects were administered the California Psychological Inventory in a controlled group setting. The testing procedure lasted approximately one hour. The subjects were informed of the purpose of the investigation and the manner in which the data would be gathered and utilized.

After gathering and scoring the CPI data, the twenty-six subjects were categorized utilizing the ADP determined by the head coach in a personal interview. The coach also rated each player on other related psychosocial variables, which may be found in Table 3.

When all related variables were gathered and hand scored, a SPSS one-way analysis of variance was applied to the data at the .05 level of significance. If the F-Ratio was found to be significant, a Duncan Multiple Range Test was applied to the data to determine which of the athletes designated position's psychosocial characteristics were significant at the .05 level.

Results. The SPSS one-way analysis of variance yielded the following significant difference in relationships between ADP and the thirty related

psychosocial variables as measured by the CPI and identified by the coach's evaluation. The data indicate that there are significant differences in relationships between the ADP and the Number of Goals Scored, Sense of Well Being, Achievement via Conformance and Height at the .05 level of significance. The statistical analysis may be found in the following tables beginning with the analysis of ADP and Number of Goals Scored.

Table 4
ADP and Number of Goals Scored

ADP	N	Mean	Standard Deviation	Standard Error
Wings	12	8.58	7.32	2.11
Centers	4	13.75	8.38	4.19
Defense	7	2.00	3.16	1.20

Table 5
Analysis of Variance
ADP and Number of Goals Scored

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Probability
Between Groups	2	382.07	191.04	4.44	.025
Within Groups	20	859.67	42.98		
Total	22	1241.74			

Table 6
Duncan Multiple Range Test
ADP and Number of Goals Scored

Subset 1		
Group	Group 3	
Mean	2.00	
Subset 2		
Group	Group 1	Group 2
Mean	8.58	13.75

The data indicates that there is a significant difference between ADP and the Number of Goals Scored. These significant differences were found to be between defense and wings and defense and centers.

The following tables include the statistical analysis for ADP and Sense of Well Being.

Table 7
ADP and Sense of Well Being

ADP	N	Mean	Standard Deviation	Standard Error
Wings	12	30.75	5.74	1.66
Centers	4	34.50	6.56	3.28
Defense	7	26.00	3.00	1.13
Goalies	3	36.67	4.73	2.73

Table 8
Analysis of Variance
ADP and Sense of Well Being

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Probability
Between Groups	3	319.20	106.40	3.97	.021
Within Groups	22	589.92	26.81		
Total	25	909.12			

Table 9
Duncan Multiple Range Test
ADP and Sense of Well Being

Subset 1			
Group	Group 3	Group 1	
Mean	26.00	30.75	
Subset 2			
Group	Group 1	Group 2	Group 4
Mean	30.75	34.50	36.67

The data indicates that there is a significant difference between ADP and Sense of Well Being. These significant differences were found to be between defense and centers and defense and goalies.

The following tables include the statistical analysis for ADP and Achievement via Conformance.

Table 10
ADP and Achievement via Conformance

ADP	N	Mean	Standard Deviation	Standard Error
Wings	12	20.25	3.96	1.14
Centers	4	24.50	5.97	2.99
Defense	7	20.57	3.60	1.36
Goalies	3	29.67	3.21	1.86

Table 11
Analysis of Variance
ADP and Achievement via Conformance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Probability
Between Groups	3	190.37	63.46	3.70	.027
Within Groups	22	377.63	17.17		
Total	25	568.00			

Table 12
Duncan Multiple Range Test
ADP and Achievement via Conformance

Subset 1			
Group	Group 3	Group 1	Group 2
Mean	20.57	22.25	24.5
Subset 2			
Group	Group 2	Group 4	
Mean	24.50	29.67	

The data indicates that there is a significant difference between ADP and Achievement via Conformance. These significant differences were found between goalies and wings and goalies and defense.

The following tables include the statistical analysis for ADP and Height.

Table 13
ADP and Height

ADP	N	Mean	Standard Deviation	Standard Error
Wings	12	71.00	1.95	.56
Centers	4	69.25	.96	.48
Defense	7	72.43	1.51	.57
Goalies	3	70.33	1.53	.88

Table 14
Analysis of Variance
ADP and Height

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Probability
Between Groups	3	27.83	9.28	3.23	.042
Within Groups	22	63.13	2.87		
Total	25	90.96			

Table 15
Duncan Multiple Range Test
ADP and Height

Subset 1			
Group	Group 2	Group 4	Group 1
Mean	69.25	70.33	71.00
Subset 2			
Group	Group 4	Group 1	Group 3
Mean	70.33	71.00	72.43

The data indicates that there is a significant difference between ADP and Height. These significant differences were found to be between centers and defense.

Discussion. The data supported the hypothesis that there are significant differences between ADP and various psychosocial and related variables. The significant differences appeared in the variables identified as Number of Goals Scored, Sense of Well Being, Achievement via Conformance and Height.

Upon examination of the data, it would appear natural that ADP characterized as offensive in nature would significantly produce more goals than the defense. The division of scoring, however, could be most valuable to the coach as various systems and strategy become involved in specific situational instances such as the power play.

The Sense of Well Being variable analysis indicated that only the ADP mean group of goalies were average with the other mean groups below

average compared to the college age norms (Gough, 1975). It appears that the defense may be characterized as conventional, self defensive and constricted in thought and action. These characteristics may have many interpretative connotations, but if one examines the structured nature of the sport of college ice hockey it may be evident that these characteristic qualities may be representative of the ADP of the defensemen.

In reference to the Achievement via Conformance variable, the data yielded again that only the ADP mean goalie group were average and that the other mean ADP groups were below average when compared to the college age male norms (Gough, 1975). It appears that the ADP defense and wing groups may be characterized as stubborn, insecure and seen easily as disorganized under stress and pressure to conform. These characteristics again may have many interpretations; however, it seems that these apparent characteristics may have valuable implications for the coach. It is the coach who makes the ADP decision, and it seems imperative that athletes be placed in positions that would best coincide the athlete's physical as well as psychosocial make up in order that the individual can develop and perform to his fullest potential.

Although the height variable may appear a natural occurrence with defensemen significantly taller than centers, this again may have "more complex significance. Often coaches automatically assign the tallest athlete to the defense. This appears to happen in many team sports and cuts across all age levels. This may be detrimental to the athlete who perhaps is both physically and psychosocially able to fully develop and perform more effectively in another position.

In summary, the results of this investigation have revealed that there seem to be significant differences between ADP and certain psychosocial and related variables. Although these findings are limited within the context of a specific sport, it is theorized that the ADP concept will have a definite impact on future research involving the psychosocial dimensions of physical activity and sport.

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